



# HM1300

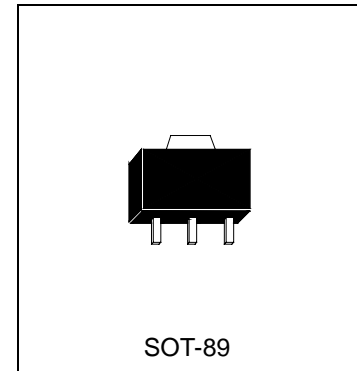
SILICON PNP EPITAXIAL TYPE

## Description

- Strobe Flash Applications
- Medium Power Amplifier Applications

## Features

- High DC Current Gain and Excellent hFE Linearity
- $hFE(1)=140-1000$ , ( $V_{CE}=-1V$ ,  $I_C=-0.5A$ )
- $hFE(2)=60(\text{Min.})$ , ( $V_{CE}=-1V$ ,  $I_C=-2A$ )
- Low Saturation Voltage
- $V_{CE}(\text{sat})=-0.5V(\text{Max.})$ , ( $I_C=-2A$ ,  $I_E=-50mA$ )



## Absolute Maximum Ratings ( $T_a=25^\circ\text{C}$ )

Characteristic		Symbol	Ratios	Unit
Collector-Base Voltage		VCBO	-20	V
Collector-Emitter Voltage		VCES	-20	V
		VCEO	-10	
Emitter-Base Voltage		VEBO	-6	V
Collector Current	DC	IC	-2	A
	Pulsed (Note1)	ICP	-5	
Base Current		IB	-0.2	A
Collector Power Dissipation		PC	1	W
Junction Temperature		Tj	150	$^\circ\text{C}$
Storage Temperature Range		Tstg	-53~150	$^\circ\text{C}$

Note 1: Pulse Width=10ms (Max.), Duty Cycle=30%(Max.)

## Electrical Characteristics ( $T_a=25^\circ\text{C}$ )

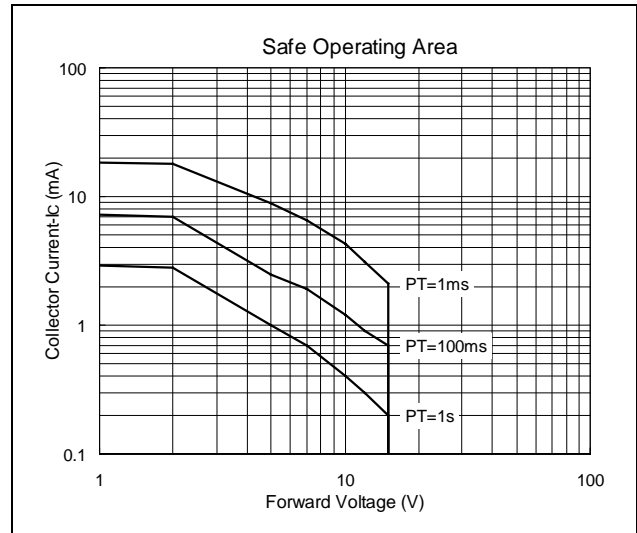
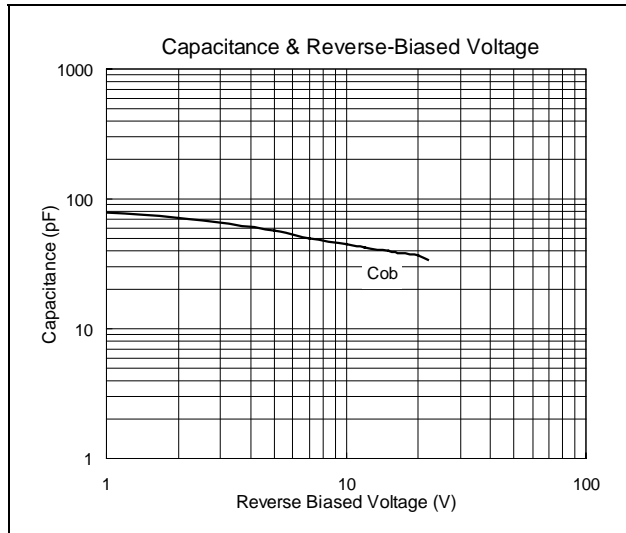
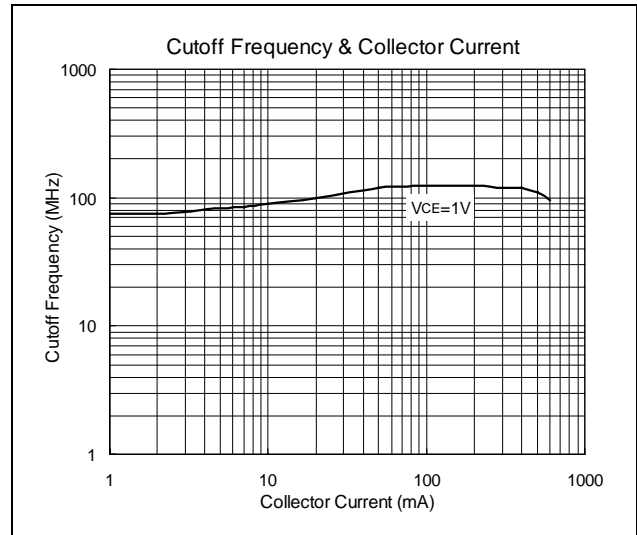
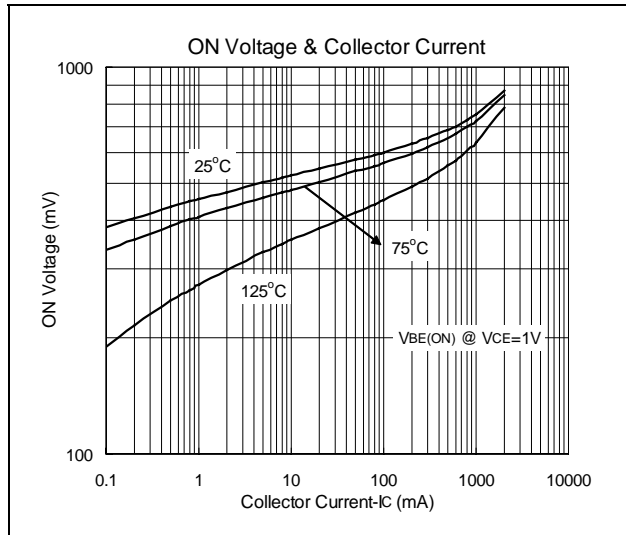
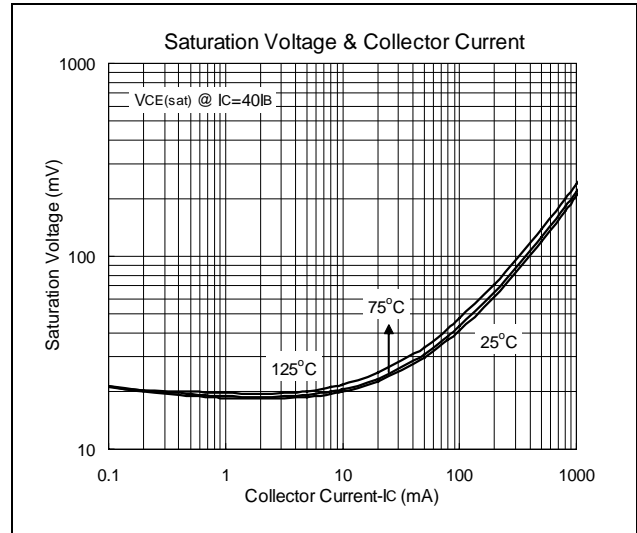
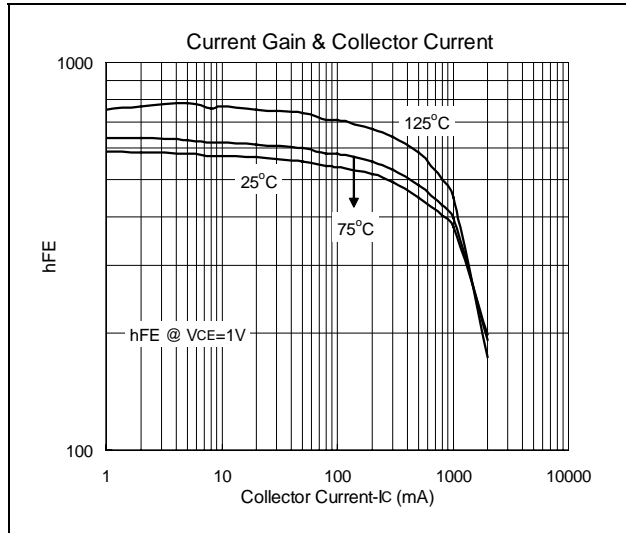
Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector Cut-off Current	ICBO	$V_{CE}=-20V$ , $I_E=0$	-	-	-100	nA
Emitter Cut-off Current	IEBO	$V_{BE}=-6V$ , $I_C=0$	-	-	-100	nA
Collector – Emitter Breakdown Voltage	$V(BR)_{CEO}$	$I_C=10mA$ , $I_B=0$	-10	-	-	V
Emitter – Base Breakdown Voltage	$V(BR)_{EBO}$	$I_E=-1mA$ , $I_C=0$	-6	-	-	V
*DC Current Gain	$hFE(1)$ (Note2)	$V_{CE}=-1V$ , $I_C=-0.5A$	140	-	1000	
	$hFE(2)$	$V_{CE}=-1V$ , $I_C=-2A$	60	-	-	
*Collector – Emitter Saturation Voltage	$V_{CE}(\text{sat})$	$I_C=-2A$ , $I_B=-50mA$	-	-0.3	-0.5	V
Base – Emitter Voltage	$V_{BE}$	$V_{CE}=-1V$ , $I_C=-2A$	-	-0.83	-1.5	V
Cutoff Frequency	FT	$V_{CE}=-1V$ , $I_C=-0.5A$	-	140	-	MHz
Collector Output Capacitance	Cob	$V_{CE}=-10V$ , $I_E=0$ , $F=1KHz$	-	50	-	pF

Note 2:  $hFE(1)$  Classification Y:140~280, GR:200~400, BL:300~600, PE:500~1000

\*Pulse Test: Pulse Width  $\leq 380\mu s$ , Duty Cycle  $\leq 2\%$



### Characteristics Curve





### SOT-89 Dimension

**Marking:**

Date Code →       H M  
 1 3 0 0

Laser Marking

Style: Pin 1.Base 2.Collector 3.Emitter

3-Lead SOT-89 Plastic Surface Mounted Package  
 HSMC Package Code: M

\*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1732	0.1811	4.40	4.60	F	0.0583	0.0598	1.48	1.52
B	0.1594	0.1673	4.05	4.25	G	0.1165	0.1197	2.96	3.04
C	0.0591	0.0663	1.50	1.70	H	0.0551	0.0630	1.40	1.60
D	0.0945	0.1024	2.40	2.60	I	0.0138	0.0161	0.35	0.41
E	0.0141	0.0201	0.36	0.51					

**Notes:** 1.Dimension and tolerance based on our Spec. dated May. 05,1996.  
 2.Controlling dimension: millimeters.  
 3.Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.  
 4.If there is any question with packing specification or packing method, please contact your local HSMC sales office.

**Material:**

- Lead: 42 Alloy; solder plating
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0

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